

Kansas Department of Health and Environment

Bureau of Environmental Remediation, Remedial Section

State Water Plan Contamination Remediation Program



Kirwin Nitrate Site

Background:

The City of Kirwin is located in southeastern Phillips County, bounded to the west by East Fifth Street and further to the west and northwest by Pro Ag Marketing (formerly the Kensington Cooperative Association (Coop)); to the north by a railroad spur maintained by Union Pacific Railroad; to the east by farm fields; and to the south by farm fields and a residence. The city of Kirwin historically had repeated detections of nitrate in their public water supply (PWS) wells in exceedance of Maximum Contaminant Limits (MCL). According to analytical information, local nitrate concentrations in ground water have apparently increased since 1991. Liquid nitrate fertilizer was transported, handled, and stored in Kirwin, and although there were no records of any leaks or spills, ground water and soil data indicated nitrate contamination originated in this area.

Several investigations have been performed in the vicinity of the site. A fuel spill investigation as part of KDHE's Underground Storage Tank (UST) program was performed in 1994, resulting in the installation of a vapor extraction system in the vicinity of the spill. A Corrective Action Study (CAS) was performed for KDHE's State Water Plan Program (SWP) in 1996 to evaluate potential remedial alternatives to provide the City of Kirwin with a safe drinking water supply. KDHE/SWP also performed an Alternative Water Supply investigation during 1996-1997. Negotiations with the landowner for site access resulted in dropping the potential PWS site from further consideration; however a new PWS well location was found.



View to the east of the subject property and former pump island.



Completed flush mount for Monitoring Well 15 which is located west of the subject property.

Solution:

In January 1999, the City of Kirwin retained an environmental contractor to assist them in the location of a new PWS well field. The primary objective of the project was to develop a well field near Kirwin that will be of sufficient quantity and quality so as to provide the city with safe drinking water. Final planning for implementation of the second phase of test drilling began in 1999; access permission for drilling on private properties was obtained in February 2000; and was followed by additional test drilling. A potential well field development location to provide adequate quantity of water will be further established when the City of Kirwin conducts additional test drilling.

KDHE's SWP provided a portion of the matching funds required for the City's Community Development Block Grant (CDBG) to establish a new PWS well field. A portion of the matching funds was utilized to complete the test drilling.

Benefits:

- **Provided investigation assistance to locate a new PWS well field.**
- **Matched funds for the city's CDBG grant to search for a new PWS location.**